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G01N 33/577, G01N 33/68**

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• **BOARD OF REGENTS
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(62) Document number(s) of the earlier application(s) in
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(54) **Antibodies to erbB2 and their therapeutic uses**

(57) Anti-ErbB2 antibodies are described which
bind to an epitope in Domain 1 of ErbB2 and induce cell

death via apoptosis. Various uses for these antibodies
are also described.

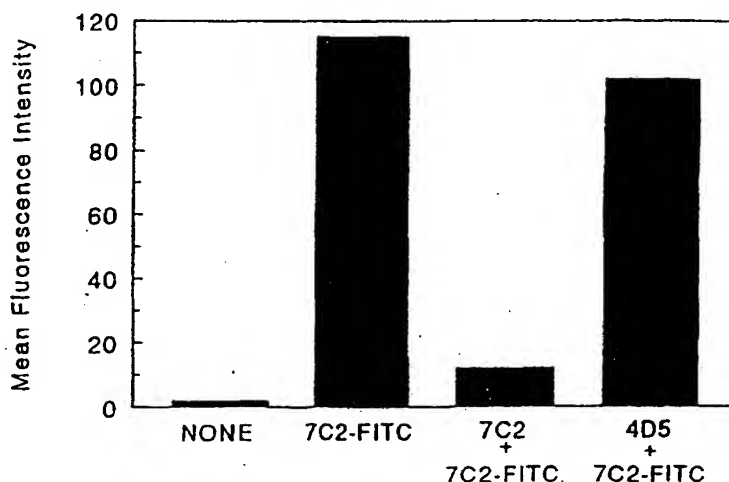


FIG. 2

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EUROPEAN SEARCH REPORT

Application Number
EP 01 10 1031

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
D,Y	B. FENDLY ET AL.: "Characterization of murine monoclonal antibodies reactive to either the human epidermal growth factor receptor or HER2/Neu gene product." CANCER RESEARCH, vol. 50, no. 5, 1 March 1990 (1990-03-01), pages 1550-1558, XP002055531 BALTIMORE, MD, USA * abstract * * figures * * table I *	1-3,9	C12N15/13 C07K16/32 A61K39/395 C12N5/20 G01N33/577 G01N33/68
Y	EP 0 505 148 A (YEDA RESEARCH AND DEVELOPMENT COMPANY LTD.) 23 September 1992 (1992-09-23) * page 3, line 25 - line 26 * * claim 16 *	1-3,9	
Y	M. SLIWKOWSKI ET AL.: "A humanized monoclonal antibody for the treatment of HER2 overexpressing breast cancer." PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, vol. 37, March 1996 (1996-03), pages 625-626, XP002055533 USA * the whole document *	1,2,4,6, 7,9	TECHNICAL FIELDS SEARCHED (Int.Cl.7) C07K
Y	WO 96 32480 A (AMGEN INC.) 17 October 1996 (1996-10-17) * page 12, line 8 - line 12 * * claim 12 *	1,2,4,6, 7,9	
-/--			
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 July 2001	Examiner Nooij, F
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EUROPEAN SEARCH REPORT

Application Number
EP 01 10 1031

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
A	G. DIGIESI ET AL.: "Production and characterization of murine mAbs to the extracellular domain of human Neu oncogene product GP185HER2." HYBRIDOMA, vol. 11, no. 4, August 1992 (1992-08), pages 519-527, XP002028488 NEW YORK, NY, USA * abstract * * table I * * figure 4 * * page 525, line 17 - line 22 *	1,4,5,9	TECHNICAL FIELDS SEARCHED (Int.Cl.7)
A	Y. KITA ET AL.: "ErbB receptor activation, cell morphology changes, and apoptosis induced by anti-Her2 monoclonal antibodies." BIOCHEMICAL AND BIOPHYSICAL RESEARCH COMMUNICATIONS, vol. 226, no. 1, 4 September 1996 (1996-09-04), pages 59-69, XP002027856 DULUTH, MN, USA * page 68, line 1 - line 16 * * page 68, line 32 - line 36 *	1,9	
A	A. ILGEN ET AL.: "Characterization of anti-HER/2 monoclonal antibodies which inhibit the growth of breast cancer cell lines in vitro." PROCEEDINGS OF THE AMERICAN ASSOCIATION FOR CANCER RESEARCH, vol. 37, March 1996 (1996-03), page 84 XP002055530 USA see abstract 564 ----- -/--	1,9	
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 July 2001	Examiner Nooij, F
CATEGORY OF CITED DOCUMENTS X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background O: non-written disclosure P: intermediate document		T: theory or principle underlying the invention E: earlier patent document, but published on, or after the filing date D: document cited in the application L: document cited for other reasons &: member of the same patent family, corresponding document	

EPO FORM 1503 03.82 (P0400)



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Office

EUROPEAN SEARCH REPORT

Application Number
EP 01 10 1031

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IntCl.7)
D,A	WO 89 06692 A (GENENTECH, INC.) 27 July 1989 (1989-07-27) * claims 16,22 * * page 30, line 28 - page 36, line 12 *	1,2,4,5,9	
P,X	WO 97 20858 A (AMGEN, INC.) 12 June 1997 (1997-06-12) * page 10, line 14 - line 36 * * page 11, line 26 - line 28 *	1-7,9	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7)
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 19 July 2001	Examiner Nooij, F
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19-07-2001

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 505148	A	23-09-1992	AU 1298392 A	24-09-1992
			CA 2063239 A	18-09-1992
			FJ 921133 A	18-09-1992
			JP 7224089 A	22-08-1995
			MX 9201173 A	30-10-1992
			NO 921040 A	18-09-1992
			NZ 242000 A	25-03-1994
			ZA 9201944 A	25-11-1992
WO 9632480	A	17-10-1996	US 5783404 A	21-07-1998
			AU 5448196 A	30-10-1996
WO 8906692	A	27-07-1989	JP 11335297 A	07-12-1999
			JP 11255666 A	21-09-1999
			JP 3502885 T	04-07-1991
			US 6165464 A	26-12-2000
			US 5677171 A	14-10-1997
			US 5720937 A	24-02-1998
			US 5772997 A	30-06-1998
			US 5725856 A	10-03-1998
			US 5770195 A	23-06-1998
			US 5720954 A	24-02-1998
WO 9720858	A	12-06-1997	US 5783186 A	21-07-1998
			AU 723492 B	31-08-2000
			AU 1278497 A	27-06-1997
			CA 2236913 A	12-06-1997
			EP 0865448 A	23-09-1998

EPO FORM P0459

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